Customer No.: 31561
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AMENDMENTS

Please amend the application as indicated hereafter.

Claim 1. (currently amended) A method of motion detection for a 3D comb filter video decoder, suitable for use in a National Television Standards Committee (NTSC) system, the method comprising:

sampling a composite video signal to obtain and register a plurality of sampling data $F_mP_{x,y}$, wherein $F_mP_{x,y}$ represents a sampling data of the composite video signal from the m^{th} frame in x^{th} line at y^{th} pixel; and

judging whether the composite video signal to be a motion state or a still state, according to the sampling data of $F_{m+1}P_{x,y}$, $F_mP_{x,y}$, $F_{m-1}P_{x,y}$, and $F_{m-2}P_{x,y}$, comprising:

using the sampling data of $F_{m+1}P_{x,y}$, $F_mP_{x,y}$, $F_{m-1}P_{x,y}$, and $F_{m-2}P_{x,y}$ to calculate and obtain a plurality of maximum differences $MD_{x,y}$, wherein $MD_{x,y}$ represents the maximum difference for the y^{th} pixel in the x^{th} line;

selecting the maximum differences for any adjacent four pixels to take an average, for obtaining a plurality of motion factors $MF_{x,y}$, wherein $MF_{x,y}$ represents the motion factor for the y^{th} pixel in the x^{th} line; and

detecting the motion factor $MF_{x,y}$ to judge whether the composite video signal to be the motion state or the still state.

Claim 2. (cancelled)

Claim 3. (currently amended) The method of motion detection recited in claim 1~~2~~,

wherein the step of sampling the composite video signal comprises using a sampling frequency, which is four times of a subcarrier signal of the composite video signal, to sample, wherein the subcarrier signal is sampled at phase angles of 0, 0.5π, π, and 1.5π.

Claim 4. (original) The method of motion detection recited in claim 3, wherein the $MD_{x,y}$ is calculated by $MD_{x,y}=Max\{ |F_mP_{x,y}-F_{m-2}P_{x,y}| , |F_{m+1}P_{x,y}-F_{m-1}P_{x,y}| \}$.

Claim 5. (original) The method of motion detection recited in claim 4, wherein the $MF_{x,y}$ is obtained by:

selecting the maximum differences for any adjacent four pixels including the $MD_{x,y}$, and taking an average, so as to obtain a plurality of averaged maximum differences $AMD_{x,h}$, wherein the $AMD_{x,h}$ represents the average maximum differences for the h^{th} pixel of the x^{th} line, in which h is a positive integer, and a calculation formula of $AMD_{x,h} = (MD_{x,h} + MD_{x,h+1} + MD_{x,h+2} + MD_{x,h+3}) / 4$ is used; and

taking a minimum from the averaged maximum differences, so as to obtain a motion factor $MF_{x,y}$, wherein $MF_{x,y}$ represents the motion factor for the y^{th} pixel of the x^{th} line.

Claim 6. (original) The method of motion detection recited in claim 5, wherein a minimum is obtained from a number of the adjacent averaged maximum differences and the $MF_{x,y}$ is obtained by

$MFx,y = Min(AMDx,y, AMDx,y-1, AMDx,y-2, AMDx,y-3)$.

Claim 7. (original) The method of motion detection recited in claim 5, wherein a minimum is obtained from a number of the adjacent averaged maximum differences and the $MF_{x,y}$ is obtained by

$$MF_{x,y} = Min(AMD_{x,y}, AMD_{x,y-3}).$$

Claim 8. (original) The method of motion detection recited in claim 5, wherein the step of detecting the motion factor $MF_{x,y}$ to judge whether the composite video signal to be the motion state or the still state for the y^{th} pixel in the x^{th} line comprises:

providing a threshold value; and

comparing the $MF_{x,y}$ with the threshold value, wherein the y^{th} pixel in the x^{th} line of the composite video signal is judged as the motion state when the $MF_{x,y}$ is greater than the threshold value, otherwise the still state is judged.

Claim 9. (original) The method of motion detection recited in claim 8, wherein the $MF_{x,y}$ is the motion factor for the m^{th} frame.